

**Amendments to and Listing of the Claims:**

This listing of claims replaces all prior versions, and listings, of claims in this application.

**Listing of Claims:**

1-11. (Canceled)

12. (Currently Amended) A magnetic detection device ~~in accordance with claim 1~~, comprising:  
a first magnetic core of a soft magnetic film,  
a conductive wire formed on said first magnetic core at a portion thereof, and  
a second magnetic core of a soft magnetic film formed on said first magnetic core so as to  
hold said conductive wire therebetween, the area of the cross-section perpendicular to a magnetic  
path being partially different,

wherein a current in which a DC bias current is superimposed on an AC current is let to  
flow through said conductive wire, and

wherein grooves are formed so that the area of the cross-section perpendicular to a magnetic path of said second magnetic core at the circumference of said conductive wire is made smaller than that at the other portion.

13-16. (Canceled)

17. (Currently Amended) A magnetic detection device ~~in accordance with claim 15~~, comprising:  
a first magnetic core of a soft magnetic film,  
a conductive wire formed on said first magnetic core at a portion thereof, and  
a second magnetic core of a soft magnetic film formed on said first magnetic core so as to  
hold said conductive wire therebetween, the area of the cross-section perpendicular to a magnetic  
path being partially different,

wherein a current in which a DC bias current is superimposed on an AC current is let to  
flow through said conductive wire, and

wherein the thickness of said conductive wire is larger than the thickness of one of said  
first magnetic core and said second magnetic core,

wherein the ratio (thickness/length) of the thickness of said conductive wire to the length thereof in a direction parallel with the direction of a magnetic field to be detected is  $1/4$  or more.

18-32. (Canceled)

33. (Previously Presented) A magnetic detection device comprising:

- a first magnetic core of a soft magnetic film having a nearly rectangular shape and formed on a nonmagnetic substrate,

- a plurality of first conductive wires formed on said first magnetic core at predetermined intervals in a direction perpendicular to the longitudinal direction of said rectangular first magnetic core,

- a second magnetic core of a soft magnetic film formed on said first magnetic core so as to hold said first conductive wires therebetween, the area of the cross-section perpendicular to a magnetic path being partially different, and

- a plurality of second conductive wires for connecting said plurality of first conductive wires in series,

wherein a current in which a DC bias current is superimposed on an AC current is let to flow through said conductive wires.

34. (Previously Presented) A magnetic detection device in accordance with claim 33, comprising a plurality of magnetic detection devices, each comprising:

- a first magnetic core of a soft magnetic film having a nearly rectangular shape and formed on a nonmagnetic substrate,

- a plurality of first conductive wires formed on said first magnetic core at predetermined intervals in a direction perpendicular to the longitudinal direction of said rectangular first magnetic core,

- a second magnetic core formed on said first magnetic core so as to hold said first conductive wires therebetween, the area of the cross-section perpendicular to a magnetic path of said second magnetic core being partially different, and

a plurality of second conductive wires for connecting said plurality of first conductive wires in series,

wherein said plurality of magnetic detection devices are arranged in parallel with said longitudinal direction, and said first and second conductive wires of the respective detection devices are all connected in series.

35. (Previously Presented) A magnetic detection device comprising:

a plurality of first magnetic cores having a nearly rectangular shape and formed in parallel on a nonmagnetic substrate,

a plurality of first conductive wires formed on said plurality of first magnetic cores at predetermined intervals in a direction perpendicular to the longitudinal direction of said plurality of first magnetic cores,

second magnetic cores formed on said plurality of first magnetic cores so as to hold said first conductive wires therebetween, the areas of the cross-sections perpendicular to magnetic paths being partially different, and

second conductive wires for connecting all of said plurality of first conductive wires in series,

wherein a current in which a DC bias current is superimposed on an AC current is let to flow through said conductive wires.

36. (Original) A magnetic detection device in accordance with claim 35, wherein the thicknesses of said second magnetic cores in the vicinities of said first conductive wires are made smaller.

37. (Original) A magnetic detection device in accordance with claim 35, wherein among said plurality of first and second magnetic cores having a nearly rectangular shape and formed in parallel on said nonmagnetic substrate, those disposed at both end portions are made shorter than those disposed at the central portion.

38. (Previously Presented) A magnetic detection device in accordance with claim 33, wherein said second conductive wires are conductive films formed on said second magnetic core.

39. (Previously Presented) A magnetic detection device in accordance with claim 33, wherein insulation films are provided between said first magnetic core and said first conductive wire, between said first conductive wire and said second magnetic core and between said second magnetic core and said second conductive wire.

40-41. (Canceled)